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5 June 1964

MEMORANDUM FOR: Director of Training

SUBJECT : Course Report - Special Scientific and Technical  
Operations Course, China Activities Branch/FE  
Division - 4-15 May 1964

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1. The first Special Scientific and Technical Operations Course for [REDACTED] FE Division was conducted from 4 May to 15 May at Headquarters on a full-time basis, with a total of twenty students enrolled. Two students were unable to complete the course because of processing for overseas assignments. One student started the course one week late because of illness; she was permitted to attend the balance of the course, but was not given credit. A total of 21 other persons audited selected portions of the course by pre-arrangements with the chief instructor.

2. The class roster is as follows:

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<u>Name</u>	<u>Division</u>	<u>Grade</u>
[REDACTED]	FE	GS-09
	FE	GS-13
	FE	GS-12
	FE	GS-13
	FE	GS-11
	FE	GS-14
	SR	GS-13
	WE	GS-13
	NE	GS-15
	NE	GS-15
	NE	GS-12
	FE	GS-13
	FE	GS-10
	FE	GS-12
	OSI	GS-14

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GROUP 1  
Excluded from automatic  
downgrading and  
declassification

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FE	GS-12
FE	GS-10
FE	GS-08
FE	GS-13
FE	GS-09

3. This course was organized and presented in response to a special request from the Far East Division, which desired special emphasis on S&T operations in Communist China. Because of the specific requirements laid down by that Division, the course content and duration differed considerably from previously run S&T courses, which stressed Soviet Russia.

4. Most of the lecturers were furnished by the Office of Scientific Intelligence, DD/S&T. Members of that office, with the endorsement of [REDACTED] DD/S&T, cooperated enthusiastically in presenting this course. During the course a one-day seminar on "operations" was jointly conducted by representatives of FI [REDACTED] and FE/[REDACTED]. One day of the course was devoted to lectures by ORR representatives.

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5. Unfortunately, [REDACTED], who had agreed to address the group, was unable to do so because of unforeseen circumstances, though he tried to do so on two different occasions. (See schedule attached.) The following lecturers were also unable to keep their appointments and furnished substitutes as follows: Mr. George [REDACTED] GSD/OSI, represented by [REDACTED] ABCD/OSI, represented by [REDACTED] C/BMSD/OSI, for whom [REDACTED] substituted. The details of the course content will not be repeated here, as the attached schedule summarizes the scope of each lecture, and the objectives are outlined in detail in the foreword thereto.

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6. Three field trips were made. These included the US Army Biological Laboratories at Ft. Detrick, Maryland, on 15 May, the Brookhaven National Laboratories at Upton, New York, on 14 May, and the George C. Marshall Space Flight Center at Huntsville, Alabama. For this last tour, the class left Washington Sunday afternoon, 31 May, toured the Center on 1 June, and returned to Washington that evening. All of these trips were considered helpful by all of the students; however, the Brookhaven tour was not particularly oriented to the class needs. Although the undersigned had made advance arrangements with the local Brookhaven representative of the activities concerned and explained that emphasis was desired on indicators, this word was apparently not passed to the various guides, who gave what appeared to be a standard VIP treatment to their briefings. At Ft. Detrick, the various briefers did point out indicators

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where possible, and [REDACTED] There was some overlapping of the coverage made in the classroom by OSI representatives. The most profitable tour was that of the George C. Marshall Space and Flight Center. While there the class was able to observe equipment and processes characteristic of missile production and testing activity, and to get a better idea of the many industrial resources required to support such activity. This trip was considered the most useful of all by all the students. Interestingly, this trip was to have been made on 21 May, but was postponed because all key personnel were going to Cape Kennedy to witness the "Moon Shot," which in turn was postponed.

#### Student Comments

7. The class is to be complimented on the care and thought they gave to their critiques. Several helpful suggestions were made and these will serve to improve the next running of the course, scheduled for September 1964. The results of the critique questionnaire were as follows:

a. Do you feel that the course achieved its objectives?  
Yes - 20 (of 20)

b. Was the course sufficiently comprehensive?  
Yes - 17. Too comprehensive - 3.

c. Should additional subjects be included in the future?  
If so, what do you recommend? Yes - Radar - 4; Basic Electronics - 10; Computer Principles - 2; China Topography - 3; More on Atomic Energy, Missiles - 3; More on operations - 7; [REDACTED] - 3.

d. What subjects could be eliminated or condensed?  
ORR lectures - 9 [REDACTED]

e. What was your impression of the course as a whole?  
With one exception all members of the course considered it highly worthwhile, eight described it as excellent, five as very good, and the other three did not make any overall adjectival description of the course. The exception thought the course good, and oddly enough, that it had fulfilled its objectives, but stated that he did not feel that anything less than a scientific background would help in the conduct of S&T operations, and that it would obviously take several years to acquire such a background.

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f. Miscellaneous

(1) Most of the students complained about the oversized room (1A-07 Hq.) and the resultant physical difficulties. This could not be helped, as it was the only room available at Langley.

(2) The consensus was that the ORR portion of the course be shortened, perhaps to half its present length. Unfortunately, although the ORR lecturers had prepared their lectures well, the subject matter, though important, was by nature not as fascinating as that on scientific subjects. One student suggested that future ORR speakers use more comparisons (on production distribution, etc.), rather than absolute statistics, which are difficult to remember.

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8. By arrangement with the former chief of the FE/ [REDACTED] only one day of the course was devoted to operations as such. This was done because all the students were experienced in operations, and it was desired that the course emphasize orientation in the basic sciences, and an exposition of what is known about S&T in Red China, and what information is needed.

9. The dramatic strides made and publicized in the scientific field during the past three years caused an interesting change in student attitude. While students had complained that there was too much emphasis on scientific subjects in the previous S&T courses, this class indicated an almost unanimous desire for more instruction in scientific matters, particularly in the fields of basic electronics and the principles of radar, telemetry, and computer principles.

10. Some of the students suggested that the lectures on biological and chemical warfare be eliminated or condensed. This suggestion was made owing to the fact that an excellent and detailed briefing of some four hours was presented at Ft. Detrick during the field trip and furnished ample [REDACTED]

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11. Without exception, all students commented on the outstanding lectures presented by [REDACTED] ABCD/OSI; [REDACTED] C/Plans & Programs/DD/S&T; [REDACTED] C/General Services Div/OSI; and [REDACTED] C/Non Soviet Weapons Br/BMSD/OSI. Only three speakers were mentioned adversely, one by ten members of the class, one by four, and one by one.

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12. The ultimate test of this or any course of instruction is whether or not it helps the student to do a better job in the field of operations concerned. As this was the first running of the course in its present form, the students were asked to indicate whether they thought that what they had learned would help them in the conduct of possible future S&T operations. It was most gratifying to note that with the one exception previously mentioned, all the students felt that the knowledge they accrued from the course would indeed be of use, both because of the information they had acquired and the confidence they had gained by this brief guided tour beyond the shroud of mystery that often insulates the layman from even basic scientific principles. The following excerpts from student critiques are illustrative of this thought:

a. "Generally I feel that the whole course was highly worthwhile in that it has served to impress upon me the importance of the ChiCom S&T target. Furthermore, the course has served to enlighten me on many of the basics with some knowledge of the subject matter. I feel that this 'feel' is important in my case because I am scheduled to depart for the field very shortly and I will have ample opportunity to put this acquired knowledge to some use. I highly recommend the continuation of this course for other case officers going out to the field."

b. "The course was an outstanding contribution to my own understanding of the importance and significance of the S&T field. It was well designed, well presented, most interesting and very comprehensive. I have urged several others to attend it at its next running. The suggestions and criticisms above are really quite small when placed beside the many fine points of the entire program. I should think the high spot occurred during the first several days (not considering the field trips) in the explanation of China's atomic energy and missile efforts. This was done well and done in a manner to interest and teach. The presentation left a lasting impression and provided the foundation upon which to fit new information into proper perspective."

c. "In general I think that this course opened up what had previously been a closed door to many of the case officers attending it. Like most Americans, I think many of us feel that we are anachronisms in modern day America. The world of science has jumped far beyond the smattering of scientific training we may have had in high school or college. The old fashioned vacuum

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tube (which few of us ever understood) is now being outmoded by the transistor, the jet plane is being challenged by the rocket as a coming mode of mass transportation, the automated factory is replacing the lathe operator and the computer is replacing the bookkeeper. This course provided some insight into this new world - perhaps only a small peek - but nevertheless a useful one. By so doing I think that we are more attuned to the collection needs of the analysts and of their intelligence customers."

d. "Training is wonderful for the morale. This course was particularly good in that respect. The adult method of organization, the manner of presentation, and the use of visual aids was noteworthy. As an NE hand, I, of course, found most of the information new and useful. But more important, the emphasis on the need for collection in a field not usually considered by the NE Division, the stress on the opportunities which exist for such collection - even by persons in other divisions - has opened (if such a poetic term may be excused) new vistas."

e. "I have probably been unduly critical of the course. My concern as reflected in my comments has reference to ways and means of tightening up the course. I feel that the course was well worth the effort, and that it should be repeated on a regular basis. I do not agree that there is insufficient experience or useful material available to conduct such a course. Since I am an S&T desk officer, I was particularly sensitive to the class reaction. The class reaction was extremely favorable, interest was high, and the class to a man came away with the feeling that he had learned something invaluable. The course was stressed in the right aspects of S&T China, and I believe that the class very quickly got the idea that there is no reason to be reluctant to engage in S&T operations. I believe that a sufficient amount of confidence was imparted to every class member so that he could participate in S&T operations, if called on to do so."

#### Discussion

13. It is believed that the basic ORR lectures might profitably be condensed into one-half day (from the present full day) by covering the light and heavy industries in Red China in two two-hour lectures, rather than be treating industries within those classifications individually as was done in this course. This portion of the course should not be eliminated, as the practical scientific capability of any country is inexorably linked with its industrial potential.

14. Despite the fact that this was not a graded course, the entire class was most attentive to all the presentations, including those they considered dull. They asked intelligent questions, and showed by them that they had indeed absorbed the key points. As previously mentioned, even their preparation of the critiques showed thought and an earnest desire to see the course continued and improved.

15. The senior representative in the class from NE Division and an observer from WE Division both indicated that they would like to see a similar course with emphasis on the requirements of their Divisions' needs. In view of the fact that neither of these Divisions would have more than a handful of students, however, [REDACTED] has suggested a course be organized that would include common basic lectures given to all students regardless of area specialization. In the later stages the group would be divided into division/area groups for specialized training. This portion would include additional detailed discussions on operations.

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16. Prior to the presentation of the next course, the divisions concerned will be consulted to determine whether they can spare their students for three weeks, rather than two. This would permit inclusion of more instruction on basic electronics, radar, computer principles, and operations, which were the principle requests of the students, and with which the undersigned concurs. If this is not the case, some, but not all, of the aforementioned instruction could be included by cutting both the ORR and [REDACTED] to one-half day each, without unduly detracting from the course.

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[REDACTED]  
Chief Instructor

Attachment: Schedule